REMARKS

The Final Office Action dated April 30, 2008 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 6, 8, 17 and 18 have been amended to more particularly point out and distinctly claim the subject matter of the invention. Claim 7 has been cancelled without prejudice or disclaimer. No new matter has been added and no new issues are raised which require further consideration or search.

Claim 9 was objected to for containing allowable subject matter and would be allowed if amended into independent form to include all of the limitations of its parenting claim. Applicants wish to thank the Examiner for the indication of allowable subject matter. However, claims 6-8 and 17-18 are respectfully submitted for reconsideration.

Claims 6-7 and 17-18 were again rejected under 35 U.S.C. §102(e) as being unpatentable over Bingham (U.S. Patent No. 6,035,000) The Office Action took the position that Bingham discloses all of the elements of the claims. This rejection is respectfully traversed for at least the following reasons.

Claim 6, upon which claims 7-9 are dependent, recites a subchannel digital data communication system. The system includes a media for carrying high speed digital data signals generated by a high speed data transmitter. The system also includes a transmitter means for receiving subchannel data and which includes at least one of control data and management data corresponding to said high speed digital data signals modulating it onto a host signal which propagates on said media. The subchannel data is modulated onto a subchannel carrier having a frequency in a portion of the spectrum of said high speed data where excessive interference from frequency components of said high speed data signals will not be experienced. The system also includes a receiver means coupled to said media for recovering said subchannel data from said host signal.

Claim 17 recites a system for transmitting subchannel data. The system includes a media, and transmitter means for receiving subchannel data which includes at least one of control data and management data corresponding to said high speed digital data signals and modulating it onto a host signal which propagates on said media and modulating it onto a host signal which propagates on said media. The subchannel data is modulated onto a subchannel carrier having a frequency in a portion of the spectrum of said high speed data where excessive interference from frequency components of said high speed data signals will not be experienced

Claim 18 recites a system for transmitting subchannel data. The system includes a media, and receiver means coupled to said media for recovering said subchannel data from a host signal modulated with said subchannel data propagating on said media. The subchannel data includes at least one of control data and management data corresponding to said high speed digital data signals and modulating it onto a host signal which propagates on said media, and wherein said subchannel data is modulated onto a subchannel carrier having a frequency in a portion of the spectrum of said high speed data where excessive interference from frequency components of said high speed data signals will not be experienced

As will be discussed below, the teachings of Bingham fail to disclose or suggest all of the elements of the claims, and therefore fail to provide the features discussed above. The rejection is respectfully traversed for at least the following reasons.

Bingham is directed to reducing interference in multi-carrier data transmission systems. FIG. 12 illustrates a central modem configured to perform a discrete multi-tone transmission scheme. A transmitter 40 of the modem includes an encoder 43 which serves to multiplex, synchronize and encode data to be transmitted. Incoming "bit streams" are translated into phase and quadrature components and are encoded onto subchannels (see column 13, lines 29-36). Further, the transmitter 40 includes a line monitor that monitors the communication line to determine the line quality of each of the available subchannels (e.g., noise level, gain, phase shift etc.).

The subchannels disclosed in Bingham are referred to as 256 tones or subchannels that are 4.3125 kHz wide and which are part of a larger very high speed digital subscriber line (VDSL) configuration (see column 2, lines 15-20 of Bingham). Contrary to the use of the term subchannel in Bingham, the present application refers to subchannel data as a channel that carries subchannel data which is disclosed in the specification as "out of band management and control data will be hereafter referred to as subchannel data" (see first paragraph of page 2 of the specification). Applicants have amended independent claims 1, 17 and 18 to recite that "the subchannel data includes at least one of control data and management data corresponding to said high speed digital data signals." Bingham does not disclose that subchannel data includes control and/or management data. For at least this reason, the rejection of the claims must be withdrawn.

In addition to the above noted deficiencies of Bingham, the disclosure of Bingham also fails to teach or suggest "said subchannel data being modulated onto a subchannel carrier having a frequency in a portion of the spectrum of said high speed data where excessive interference from frequency components of said high speed data signals will not be experienced", as recited, in part, in independent claim 6, and similarly in independent claims 17 and 18. The Office Action alleged that column 2, lines 12-18 and 36-38, and the Abstract of Bingham disclose the above noted features of the claims. Applicants disagree and submit that the use of dummy tones to suppress emissions in restricted frequency bands, and designated quiet tones used to cancel RF interference on adjacent active tones are not comparable to the subject matter recited in the claims.

The claims recite modulating subchannel data onto a subchannel carrier having a frequency in a portion of the spectrum of the high speed data where excess interference will not be experienced. Conversely, Bingham does not disclose using a frequency that is more or less likely to reduce interference. Bingham discloses transmitting a dummy tone over a selected dummy subchannel where the magnitude and the phase are chosen to suppress the transmission power within the restricted frequency band (see column 2, lines 45-52 of Bingham). Bingham does not disclose selecting a frequency to transmit subchannel data which includes at least one of management and control data and where the subchannel is modulated onto a subchannel carrier having a frequency in a portion of the spectrum of said high speed data where excessive interference from frequency components of said high speed data signals will not be experienced.

Bingham embraces a restricted frequency band by transmitting non-intrusive and amplitude and phase-controlled dummy signals over the restricted frequency band. Contrary to the teachings of Bingham, the claims disclose modulating the subchannel data (management and/or control data) on a portion of the spectrum where excessive interference will not be experienced. Bingham is silent regarding this feature of the claims.

For at least the reasons stated above, independent claims 6, 17 and 18 are allowable over the teachings of Bingham. By virtue of dependency, claims 8 and 9 are also allowable over Bingham. Withdrawal of the rejection and an allowance thereof is respectfully requested.

Claim 8 was rejected under 35 U.S.C. §103(a) as being unpatentable over Bingham in view of Ducarior (U.S. Patent No. 6,167,077). Applicants respectfully traverse this rejection.

Bingham is discussed above. Ducarior discloses a method for minimizing data skew during transmission over a plurality of data lines. The method includes first simultaneously transmitting a test pattern over the plurality of data lines and receiving the test pattern. Data skew is measured across the plurality of data sets comprising the test pattern, and an inversing data pattern which minimizes the data skew in the data stream is determined. The inversing data pattern for each of the plurality of data sets is communicated to a demultiplexer. This allows multiple high speed data lines to transmit data while minimizing skew.

Claim 8 is dependent upon claim 6 and inherits all of the limitations thereof. As discussed above, the combination of Bingham fails to disclose or suggest all of the elements of claim 6. In addition, Ducarior fails to cure the deficiencies in Bingham as Ducarior also fails to disclose or suggest "transmitter means for receiving subchannel data which includes at least one of control data and management data corresponding to said high speed digital data signals and modulating it onto a host signal which propagates on said media, said subchannel data being modulated onto a subchannel carrier having a frequency in a portion of the spectrum of said high speed data where excessive interference from frequency components of said high speed data signals will not be experienced." Thus, the combination of Bingham and Ducarior fails to disclose or suggest all of the elements of claim 8. Furthermore, claim 8 should be allowed for at least its dependence upon claim 6, and for the specific limitations recited therein.

For at least the reasons discussed above, Applicants respectfully submit that the cited references fail to disclose or suggest all of the elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is therefore respectfully requested that all of claims 6, 8, 9, 17 and 18 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned representative at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

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